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Klunker/Schmitt-Nilson/Hirsch
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Patentanwälte
European Patent Attorneys
European Trade Mark Attorneys

Dr. Frieder Klunker, Dipl.-Ing.
Dr. Gert Schmitt-Nilson, Dipl.-Ing.
Peter Hirsch, Dipl.-Ing.
Thomas Amann, Dipl.-Phys.
Jochen Höfeld, Dipl.-Ing.

VAT Reg. No. DE 12 999 1026

KSNH Patentanwälte Winzererstraße 106 D-80797 München

An das
Europäische Patentamt
Erhardtstraße 27

D- 80298 München

Ihr Zeichen / Your Ref

Unser Zeichen / Our Ref

Tag / Date

K 61 607/8 TAgh

02/08/05

PCT Patent Application PCT/EP2004/013529
Otis Elevator Company

This is in response to the First Written Opinion dated March 21, 2005:

It is requested to conduct International Preliminary Examination with respect to the present application.

In response to the First Written Opinion, an amended set of claims 1 to 13 is filed. Original claims 14 to 19 have been deleted. The amendments in the claims mainly relate to claims 1 and 5. In claim 1, the hand-written passage has been added in order to limit the claim over the prior as uncovered by the International Search. The restriction is supported by the embodiment of Fig. 3 to 5 and relates to the mounting of the restraining device to the step. Particularly, as can be seen in Fig. 3 the restraining device is attached to the support arm, which is part of the step. The disclosure for the second alternative can be found, for example, in the embodiments of Fig. 6 to 12. Particularly, Fig. 7 clearly discloses the respective feature.

The amendment in claim 5 merely relates to correcting a clerical error. It is clear that it should read "... according to any of claims 1 to 3 ...". Moreover,

Phone +49/89/3077410
Fax: +49/89/30774141
E-Mail ksnh@ksnh.com
URL www.ksnh.com

Office:
Winzererstraße 106
D-80797 München
Germany

Also at:
Paseo Explanada de Espana No. 3
E-03002 Alicante
Spain

k/s/n/h

there is an original disclosure in the third full paragraph on page 4 for such correction/amendment.

The people conveyor as claimed now differs from the prior art in that the restraining device is attached so as to move together with the step. Particularly, the restraining device is either directly attached to the step or is attached to the step axle which is moving together with the step. This difference solves the objective problem of allowing easy and low cost installation of a restraining device in an elevator system and particularly the retro fitting of existing people conveyor installations with a restraining device. In contrast to the solutions of the prior art with the restraining devices attached to the truss or the guide rail, the invention goes a completely different way by attaching a plurality of restricting devices to the steps or connecting axles which – at first glance – appears to be very expensive in view of cost and time. However, this solution is not requiring a substantial re-design of the complete installation in order to allow for the attachment of the restraining device to the guide rails, etc. but merely requires to attach the individual restraining devices to the steps or connecting axles which can be done relatively easy during overhaul of existing installations. Moreover, each individual restraining device can be by far less complex so that the plurality of restraining devices can be relatively cheap. Moreover, the restraining devices which are to be attached to the steps or connecting axles will typically fit to a plurality of different types of people conveyors whereas the restraining devices of the prior art have to be judiciously adapted to each individual type of people conveyor.

As there is no teaching for the skilled person to avoid such a solution and, moreover, in view of the fact that the prior art teaches a different concept for restraining devices, e.g. a single one attached to the truss or guide rails, there was no motivation for the skilled person to develop the existing technology towards the invention.

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Applicant does not intend to file amended description pages in the course of the International phase of present application for economical reasons. Instead, the applicant prefers to do so in the national/regional phases only, were required.

It is requested to issue the International Preliminary Examination Report informing the applicant of the allowability of the present claims. In case the Examiner has attached do so, it is requested to issue a further office action or to contact the undersigned by phone.


Thomas Amann

Enclosures

Amended claims 1 to 13,
Demand

K 61 607/8

CLAIMS

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1. People conveyor (2) including an endless conveyor band (4) extending through an inclined portion (6), a first and a second turnaround portions (8) and a return portion (5) of an endless path and comprising a plurality of steps (10) connected to and driven by a step chain (12), the steps (10) comprising a step roller (18), the people conveyor (2) further including a step roller track (20) for guiding the step roller (18), the step roller track (20) extends along the path of the conveyor band (4) and has an inner and an outer rails (24, 22) for supporting the step roller (18), and a device (20) for restraining the step roller (18) against one of the inner and outer rails (24, 22), *the restraining device (30) is mounted to the step (10) or to a connecting axle (70) which connects one chain link (64) on one side of the conveyor band (4) with one chain link (64) on the other side of the conveyor band (4) so as to move together with the step (10).*
2. People conveyor (2) according to claim 1, wherein such restraining device (30) comprises an elastic biasing member (40) for elastically biasing the step roller (18) against one of the inner and outer rails (24, 22).
3. People conveyor (2) according to claim 1 or 2, wherein the restraining device (30) is adapted for allowing a gradual transition of the step roller (18) from one of the inner and outer rails (24, 22) to the other one from inner and outer rails (24, 22) in any of the first and second turnaround portions (8).
4. People conveyor (2) according to any of claims 1 to 3, wherein the restraining device (30) is arranged between the step (10) and the drive chain (12).

- 465 5. People conveyor (2) according to any of claim ^{5 1 to} 3, wherein one drive chain (12) is arranged at each lateral edge of the conveyor band (4), wherein each step chain (12) comprises a plurality of chain links (64) and wherein a connecting axle (70) connects one chain link (64) on one side of the conveyor band (4) with one chain link (64) on the other side of the conveyor band (4), and wherein the restraining device (30) is arranged between the step (10) and the connecting axle (70).
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- 475 6. People conveyor (2) according to claim 5, wherein the restraining device (30) comprises a torsion spring (76) attached to the connecting axle (70) and supported thereto with one of the free ends (78) of such spring (76) and having the second free end (80) thereof arranged so as to engage the step (10).
- 480 7. People conveyor (2) according to any of claims 1 to 3, wherein the restraining device (30) is arranged between the step (10) and the step roller track (20).
- 485 8. People conveyor (2) according to claim 7, wherein the restraining device (30) comprises a supplementary roller (50) and a biasing means (40) for biasing the supplementary roller (50) against one rail (22, 24) of the step roller track (29).
- 490 9. People conveyor (2) according to claim 8, wherein the step roller (18) is attached to the step (10) by a connecting arm (16) and wherein the supplementary roller (50) is supported by the connecting arm (16).
- 495 10. People conveyor (2) according to claim 8 or 9, wherein the biasing means (40) biases the supplementary roller (50) against the outer rail (22).

11. People conveyor (2) according to any of claims 8 to 10, wherein the biasing means is a linear spring having a first leg (42) and a second leg (44) being bent with respect to each other by a predetermined angle, further comprising a supporting block (32) at the support arm (16), the supporting block (32) comprising a first and second recesses (34, 36) each portion of the first and second legs of the linear spring being respectively fitted to the first and second recesses (34, 36) to thereby limit deformation of the first and second legs (42, 44) of the linear spring to a predetermined range.

12. People conveyor (2) according to claim 11, further comprising a cover (38) mounted to the supporting block (32) to prevent the first and second legs (42, 44) of the linear spring from being separated from the first and second recesses (34, 36) of the supporting block (32).

13. People conveyor (2) according to claim 11 or 12, further comprising a member (52) for supporting the supplementary roller (50), the member (52) having a recess (53) in which a portion adjacent to the junction between the first and second legs (42, 44) of the linear spring is fitted, and a cover (54) which covers the recess (53) of the member (52).

~~14. Device (30) for restraining rise of a step roller (18) of a people conveyor (2), the people conveyor (2) including steps (10) circulating a closed loop, a track (20) having inner and outer rails (22, 24) and providing the circulating loop of the steps (10), and a step roller (18) connected to each step (10) by means of a connecting member (16) and rolling along the inner rail (24) of the track (20), the device (30) comprising:~~

~~a supplementary roller (50) disposed between the outer rail (22) and the inner rail (24) of the track (20);~~

~~an elastic member (40) for supporting the supplementary roller (50); and~~

~~a supporting block (32) mounted to the connecting member (16) and fixing the elastic member (40) thereto.~~

15. Device (30) of claim 14, wherein the elastic member (40) biases the supplementary roller (50) toward the outer rail (24) of the track (20) to roll thereon.
- 535 16. The device (30) of claim 14 or 15, wherein the elastic member (40) is a linear spring having a first leg (42) and a second leg (44), the first leg (42) and the second leg (44) being bent with respect to each other by a predetermined angle; and
- 540 the supporting block (32) has first and second recesses (34, 36), each portion of the first and second legs (42, 44) of the elastic member (40) being respectively fitted to the first and second recesses (34, 36) to thereby limit deformation of the first and second legs (42, 44) of the elastic member (40) to a predetermined range.
- 545 17. Device (30) of claim 16, wherein the first leg (42) of the elastic member (40) has a bent portion (42a) at its tip, the tip being pivotably inserted into the supporting block (32); and
- 550 the second leg (44) of the elastic member (40) has a bent portion (44a, 44b) at its tip, the tip being configured to contact a bottom surface of the supporting block (32).
- 555 18. Device (30) of claim 16 or 17, wherein a cover (38) is mounted to the supporting block (32) to prevent the first and second legs (42, 44) of the elastic member (40) from being separated from the first and second recesses (34, 36) of the supporting block (32).
- 560 19. Device (30) of any of claims 16 to 18, wherein the device (30) further comprises a member (52) for supporting the supplementary roller (50), the member (52) having a recess (53) in which a portion adjacent to the junction between the first and second legs (42, 44) of the elastic member (40) is fitted, and a cover (54) which covers the recess (53) of the member (52).

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below:

IPEA/ EPA

PCT

CHAPTER II

DEMAND

under Article 31 of the Patent Cooperation Treaty:

The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty.

For International Preliminary Examining Authority use only	
Identification of IPEA	Date of receipt of DEMAND
Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION Applicant's or agent's file reference K 61 607/8 - /gh	
International application No. PCT/EP2004/013529	International filing date (day/month/year) 29 NOV 2004 (29.11.2004) (Earliest) Priority date (day/month/year) 20 NOV 2003 (29.11.2003)
Title of invention Device for restraining the rise of a step roller of a people conveyor	
Box No. II APPLICANT(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) Otis Elevator Company Ten Farm Springs Road Farming, Connecticut 06032-2568 U.S.A.	Telephone No.
	Facsimile No.
	Teleprinter No.
	Applicant's registration No. with the Office
State (that is, country) of nationality: US	State (that is, country) of residence: US
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) SCHMIDT, Rainer Stettiner Weg 5 31689 Lindhorst GERMANY	
State (that is, country) of nationality: DE	State (that is, country) of residence: DE
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) STUFFEL, Andreas Berliner Straße 3 31675 Bückeburg GERMANY	
State (that is, country) of nationality: DE	State (that is, country) of residence: DE
<input checked="" type="checkbox"/> Further applicants are indicated on a continuation sheet.	

Continuation of Box No. II APPLICANT(S)

If none of the following sub-boxes is used, this sheet should not be included in the demand.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

KIM, Jeong Rak
290-43 Sungui 2-dong
Nam-gu, Incheon
402-817 Republic of Korea

State (that is, country) of nationality:
KR

State (that is, country) of residence:
KR

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (that is, country) of nationality:

State (that is, country) of residence:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (that is, country) of nationality:

State (that is, country) of residence:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (that is, country) of nationality:

State (that is, country) of residence:



Further applicants are indicated on another continuation sheet.

Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCEThe following person is ☒ agent ☐ common representativeand ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination.☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*Klunker.Schmitt-Nilson.Hirsch
Patentanwaelte
Winzererstrasse 106
D-80797 Munich
Germany

Telephone No.

+49.89.307741-0

Facsimile No.

+49.89.307741-41

Teleprinter No.

Agent's registration No. with the Office

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.**Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION****Statement concerning amendments:***

1. The applicant wishes the international preliminary examination to start on the basis of:

☐ the international application as originally filedthe description ☒ as originally filed☐ as amended under Article 34the claims ☐ as originally filed☒ as amended under Article 19 (together with any accompanying statement)☐ as amended under Article 34the drawings ☒ as originally filed☐ as amended under Article 342. ☐ The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.3. ☐ The applicant wishes the start of the international preliminary examination to be postponed until the expiration of the applicable time limit under Rule 69.1(d).4. ☐ The applicant expressly wishes the international preliminary examination to start earlier than at the expiration of the applicable time limit under Rule 54bis.1(a).

* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: English

☒ which is the language in which the international application was filed.☐ which is the language of a translation furnished for the purposes of international search.☐ which is the language of publication of the international application.☐ which is the language of the translation (to be) furnished for the purposes of international preliminary examination.**Box No. V ELECTION OF STATES**

The filing of this demand constitutes the election of all Contracting States which are designated and are bound by Chapter II of the PCT.

Box No. VI CHECK LIST

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

- | | | |
|--|---|----------|
| 1. translation of international application | : | sheets |
| 2. amendments under Article 34 | : | 3 sheets |
| 3. copy (or, where required, translation) of amendments under Article 19 | : | sheets |
| 4. copy (or, where required, translation) of statement under Article 19 | : | sheets |
| 5. letter | : | 3 sheets |
| 6. other (<i>specify</i>) | : | sheets |

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received not received


<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

The demand is also accompanied by the item(s) marked below:

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> fee calculation sheet | 5. <input type="checkbox"/> statement explaining lack of signature |
| 2. <input type="checkbox"/> original separate power of attorney | 6. <input type="checkbox"/> sequence listing in computer readable form |
| 3. <input type="checkbox"/> original general power of attorney | 7. <input type="checkbox"/> tables in computer readable form related to a sequence listing |
| 4. <input type="checkbox"/> copy of general power of attorney; reference number, if any: | 8. <input checked="" type="checkbox"/> other (<i>specify</i>): cheque |

Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).


Thomas Amann
Patent Attorney
Munich, August 3, 2005

For International Preliminary Examining Authority use only

1. Date of actual receipt of DEMAND:

2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):

3. ☐ The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply.
☐ The applicant has been informed accordingly.
4. ☐ The date of receipt of the demand is WITHIN the time limit of 19 months from the priority date as extended by virtue of Rule 80.5.
5. ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 32.

6. ☐ The date of receipt of the demand is AFTER the expiration of the time limit under Rule 54bis.1(a) and item 7 or 8, below, does not apply.
7. ☐ The date of receipt of the demand is WITHIN the time limit under Rule 54bis.1(a) as extended by virtue of Rule 80.5.
8. ☐ Although the date of receipt of the demand is after the expiration of the time limit under Rule 54bis.1(a), the delay in arrival is EXCUSED pursuant to Rule 32.

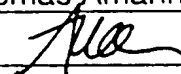
For International Bureau use only

Demand received from IPEA on:

PCT

FEE CALCULATION SHEET

Annex to the Demand

International application No. PCT/EP2004/013529	For International Preliminary Examining Authority use only
Applicant's or agent's file reference K 61 607/8 - /gh	Date stamp of the IPEA
Applicant Otis Elevator Company	
CALCULATION OF PRESCRIBED FEES	
1. Preliminary examination fee	<div style="border: 1px solid black; padding: 2px;">EUR 1.530,00</div> <div style="border: 1px solid black; padding: 2px; width: 20px; text-align: center;">P</div>
2. Handling fee (<i>Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.</i>)	<div style="border: 1px solid black; padding: 2px;">EUR 129,00</div> <div style="border: 1px solid black; padding: 2px; width: 20px; text-align: center;">H</div>
3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box	<div style="border: 1px solid black; padding: 2px;">EUR 1.659,00</div> <div style="border: 1px solid black; padding: 2px; text-align: center;">TOTAL</div>
MODE OF PAYMENT	
<input type="checkbox"/> authorization to charge deposit account with the IPEA (see below)	<input type="checkbox"/> cash
<input checked="" type="checkbox"/> cheque	<input type="checkbox"/> revenue stamps
<input type="checkbox"/> postal money order	<input type="checkbox"/> coupons
<input type="checkbox"/> bank draft	<input type="checkbox"/> other (specify):
AUTHORIZATION TO CHARGE (OR CREDIT) DEPOSIT ACCOUNT <i>(This mode of payment may not be available at all IPEAs)</i>	
<input type="checkbox"/> Authorization to charge the total fees indicated above.	IPEA/ <u>EPA</u>
<input checked="" type="checkbox"/> <i>(This check-box may be marked only if the conditions for deposit accounts of the IPEA so permit)</i> Authorization to charge any deficiency or credit any overpayment in the total fees indicated above.	Deposit Account No.: <u>2800.0439</u>
	Date: <u>August 3, 2005</u>
	Name: <u>Thomas Amann</u>
	Signature: <u></u>